

WHAT IS CLAIMED IS:

1. A power amplifier circuit comprising:
 - a power amplifier;
 - 5 a switching device for selectively connecting either a low-voltage power supply or a high-voltage power supply to the power amplifier;
 - means for generating a signal voltage in response to a voltage outputted from the power amplifier;
 - a reference-voltage generation circuit for generating a
 - 10 positive-circuit-side reference voltage and a negative-circuit-side reference voltage; and
 - a control circuit for comparing the signal voltage with the positive-circuit-side and negative-circuit-side reference voltages and controlling the switching device in response to results of the comparison so
 - 15 that the low-voltage power supply is connected to the power amplifier when an absolute value of the signal voltage is smaller than absolute values of the positive-circuit-side and negative-circuit-side reference voltages, and that the high-voltage power supply is connected to the power amplifier when the absolute value of the signal voltage is greater than the absolute values of the
 - 20 positive-circuit-side and negative-circuit side reference voltages;
 - wherein the reference-voltage generation circuit comprises a first voltage regulating circuit connected between a positive side of the low-voltage power supply and a first circuit point subjected to a negative potential for generating the positive-circuit-side reference voltage, and a
 - 25 second voltage regulating circuit connected between a negative side of the low-voltage power supply and a second circuit point subjected to a positive potential for generating the negative-circuit-side reference voltage.

2. A power amplifier circuit as recited in claim 1, wherein the negative potential is equal to a voltage at the negative side of the low-voltage power supply, and the positive potential is equal to a voltage at the positive side of the low-voltage power supply.

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3. A power amplifier circuit as recited in claim 1, wherein the negative potential is equal to a voltage at a negative side of the high-voltage power supply, and the positive potential is equal to a voltage at a positive side of the high-voltage power supply.

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4. A power amplifier circuit as recited in claim 1, wherein the negative potential is equal to a voltage at a negative side of a power source, and the positive potential is equal to a voltage at a positive side of the power source.

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5. A power amplifier circuit comprising:

a power amplifier;

first means for generating a positive-circuit-side threshold voltage and a negative-circuit-side threshold voltage;

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second means for comparing a signal voltage outputted from the power amplifier with the positive-circuit-side and negative-circuit-side threshold voltages generated by the first means; and

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third means responsive to results of the comparing by the second means for enabling the power amplifier to be activated by a first power supply when the signal voltage is in a range between the positive-circuit-side and negative-circuit-side threshold voltages, and for enabling the power amplifier to be activated by a second power supply when the signal voltage is outside the range between the positive-circuit-side and negative-circuit-side threshold voltages;

wherein a voltage across the first power supply is lower than a voltage across the second power supply; and

wherein the first means comprises a first voltage regulating circuit connected between a first circuit point subjected to a first positive potential and a second circuit point subjected to a first negative potential for generating a positive-circuit-side regulated voltage, means for generating the positive-circuit-side threshold voltage from the positive-circuit-side regulated voltage, a second voltage regulating circuit connected between a third circuit point subjected to a second negative potential and a fourth circuit point subjected to a second positive potential for generating a negative-circuit-side regulated voltage, and means for generating the negative-circuit-side threshold voltage from the negative-circuit-side regulated voltage.

6. A power amplifier circuit as recited in claim 5, wherein the first and second positive potentials are equal to a voltage at a positive side of the first power supply, and the first and second negative potentials are equal to a voltage at a negative side of the first power supply.

7. A power amplifier circuit as recited in claim 5, wherein the first positive potential is equal to a voltage at a positive side of the first power supply, and the first negative potential is equal to a voltage at a negative side of the second power supply, and wherein the second positive potential is equal to a voltage at a positive side of the second power supply and the second negative potential is equal to a voltage at a negative side of the first power supply.

8. A power amplifier circuit as recited in claim 5, wherein the first

positive potential is equal to a voltage at a positive side of the first power supply, and the first negative potential is equal to a voltage at a negative side of a power source, and wherein the second positive potential is equal to a voltage at a positive side of the power source and the second negative
5 potential is equal to a voltage at a negative side of the first power supply.